

What is claimed is:

1. A cardiac rhythm management device, comprising:
5 a plurality of sensing channels incorporating electrodes for disposition near different myocardial regions;
a controller programmed to measure the amplitudes of electrograms generated by the plurality of sensing channels during a depolarization event and thereby determine the extent to which the different myocardial regions are hypertrophied.
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2. The device of claim 1 further comprising:
a plurality of pacing channels incorporating the electrodes;
wherein the controller is programmed to deliver pacing therapy in accordance with a programmed pacing mode and with a pacing configuration that pre-excites at
15 least one myocardial region determined to be hypertrophied.
3. The device of claim 2 wherein the controller is programmed to deliver multi-site resynchronization pacing with a pacing configuration and pulse output sequence that specifies the order of the pacing pulses delivered to the different myocardial
20 regions in accordance with the extent to which the different myocardial regions are determined to be hypertrophied.
4. The device of claim 2 wherein the controller is programmed to periodically determine the extent to which the different myocardial regions are hypertrophied by
25 measurement of electrogram amplitudes and automatically reconfigure itself to deliver pacing therapy with a pacing configuration that pre-excites a myocardial region determined to be most hypertrophied.

5. The device of claim 4 wherein the controller is programmed to periodically determine the extent to which the different myocardial regions are hypertrophied by measurement of electrogram amplitudes and automatically reconfigure itself to deliver multi-site resynchronization pacing with a pacing configuration and pulse output sequence that specifies the order of the pacing pulses delivered to the different myocardial regions in accordance with the extent to which the different myocardial regions are determined to be hypertrophied.

6. The device of claim 4 wherein the controller is programmed to adjust a pacing parameter that increases the frequency of pacing if it is determined that the hypertrophy of a myocardial region has increased.

7. The device of claim 4 wherein the controller is programmed to adjust a pacing parameter that increases the delay between pre-excitation of a hypertrophied myocardial region and excitation of other regions if it is determined that the hypertrophy has increased.

8. The device of claim 4 wherein the controller is programmed to adjust a pacing parameter that decreases the delay between pre-excitation of a hypertrophied myocardial region and excitation of other regions if it is determined that the hypertrophy has decreased.

9. The device of claim 1 wherein the controller is programmed to compute a trend for the measured electrogram amplitudes.

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10. The device of claim 1 wherein the depolarization event during which an electrogram amplitude is measured is an intrinsic beat.

11. The device of claim 1 wherein the depolarization event during which an electrogram amplitude is measured is a paced beat.
12. The device of claim 2 wherein sensing and pacing channels are configured to
5 sense and pace ventricular regions.
13. A method for operating a cardiac rhythm management device, comprising:
disposing electrodes incorporated into a plurality of sensing channels near
different myocardial regions;
10 measuring the amplitudes of electrograms generated by the plurality of sensing
channels during a depolarization event to thereby determine the extent to which the
different myocardial regions are hypertrophied.
14. The method of claim 13 further comprising:
15 delivering pacing therapy in accordance with a programmed pacing mode and
with a pacing configuration that pre-excites at least one myocardial region determined
to be hypertrophied.
15. The method of claim 14 further comprising delivering multi-site
20 resynchronization pacing with a pacing configuration and pulse output sequence that
specifies the order of the pacing pulses delivered to the different myocardial regions in
accordance with the extent to which the different myocardial regions are determined to
be hypertrophied.
- 25 16. The method of claim 14 further comprising periodically determining the extent
to which the different myocardial regions are hypertrophied by measurement of
electrogram amplitudes and automatically reconfiguring itself to deliver pacing
therapy with a pacing configuration that pre-excites a myocardial region determined to
be most hypertrophied.

17. The method of claim 14 further comprising periodically determining the extent to which the different myocardial regions are hypertrophied by measurement of electrogram amplitudes and automatically reconfiguring itself to deliver multi-site resynchronization pacing with a pacing configuration and pulse output sequence that specifies the order of the pacing pulses delivered to the different myocardial regions in accordance with the extent to which the different myocardial regions are determined to be hypertrophied.
18. The method of claim 16 further comprising adjusting a pacing parameter that increases the frequency of pacing if it is determined that the hypertrophy of a myocardial region has increased.
19. The method of claim 16 further comprising adjusting a pacing parameter that increases the delay between pre-excitation of a hypertrophied myocardial region and excitation of other regions if it is determined that the hypertrophy has increased.
20. The method of claim 16 further comprising adjusting a pacing parameter that decreases the delay between pre-excitation of a hypertrophied myocardial region and excitation of other regions if it is determined that the hypertrophy has decreased.
21. The method of claim 13 further comprising computing a trend for the measured electrogram amplitudes.
22. The method of claim 13 wherein the depolarization event during which an electrogram amplitude is measured is an intrinsic beat.
23. The method of claim 13 wherein the depolarization event during which an electrogram amplitude is measured is a paced beat.

24. The method of claim 14 wherein the sensed and paced myocardial regions are ventricular regions.

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